Overview

We serve the nation by developing and applying the best science and technology to make the world a better and safer place.

Program Profile

From its origins as a secret Manhattan Project laboratory, Los Alamos has attracted world-class scientists and applied their energy and creativity to solving the nation's most challenging problems. That tradition remains today. As one of the U.S. Department of Energy's multiprogram, multidisciplinary research laboratories, Los Alamos thrives on having the best people doing the best science to solve problems of global importance.

Los Alamos' core values combine security awareness, intellectual freedom and scientific excellence with national service to generate scientific solutions for the nation's most pressing problems.

Los Alamos National Laboratory enhances global security by:

- Ensuring the safety and reliability of America's nuclear weapons
- Reducing threats to U.S. security, with a focus on weapons of mass destruction
- Providing technical solutions to national security problems in energy, environment, infrastructure and health

High-Performance Computing

Extraordinarily powerful supercomputers and detailed numerical models allow scientists to visualize and predict real phenomena, from the inner workings of nuclear weapons to the course of wildfires, global weather patterns and epidemics. High-performance computing ensures the effectiveness of America's nuclear arsenal and plays an ever-increasing role on the forefront of scientific discovery.

New and Exotic Advanced Materials

The behavior of materials is crucial to predicting nuclear weapons performance and developing new, high-tech products. Breakthroughs in materials science include smaller, longer-lasting batteries, efficient fuel cells, stronger composite materials and all-carbon prosthetics and joint replacements. Advanced materials promise such scientific breakthroughs as quantum computing and room-temperature superconductivity.

The Atlas pulsed-power facility allows scientists to study materials under extreme conditions such as those occurring in nuclear explosions.

Bioscience and Biotechnology

Evolved from the early need to understand the effects of radiation on humans, the Laboratory's health sciences groups seek to understand and protect people from the dangers associated with nuclear, biological and chemical weapons, and to expand the scope of knowledge in bioscience and biotechnology. A world leader in development of the human genome map, Los Alamos continues to develop new and better ways of unlocking the mysteries of life.

Cutting-Edge User Facilities

Every year, hundreds of scientists and researchers from around the world use the Laboratory's more than 50 cross-disciplinary user facilities. LANSCE, the nation's most powerful source of pulsed particles, allows scientists to study materials science, bioscience, physics and imaging. The National High Magnetic Field Laboratory provides insight into materials science and condensed matter physics.

Earth and Environmental Science

Los Alamos applies advanced technologies such as climate modeling and a wildfire prediction system to better understand the complex geophysical systems that drive our earth, oceans and atmosphere. The Laboratory uses probabilistic risk assessment to analyze how natural and man-made hazards might harm human health and the environment.

Since 1943, Los Alamos has created and applied advanced science and technology to solve critical challenges in national defense and civilian research.

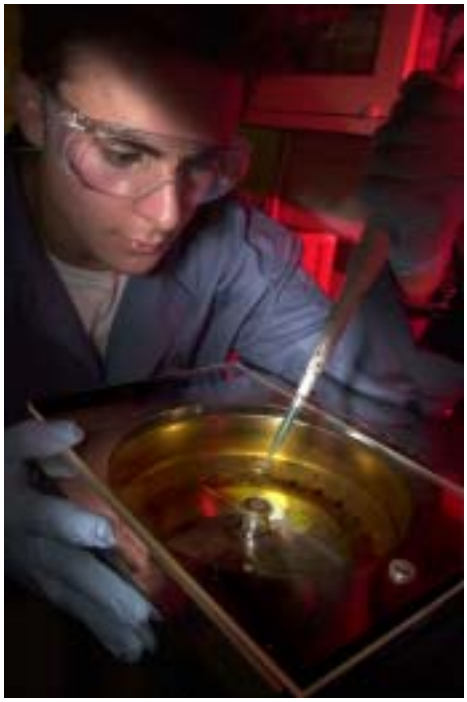
Physics and Theory

Los Alamos contributes to scientific understanding of the physical world, and generates new technologies through physical experimentation and accurate analysis of experimental data. From high-energy nuclear physics to the structure of the human genome to the theoretical quantum computer, the physical sciences are central to the Laboratory mission.

Recent Accomplishments

Recent Los Alamos accomplishments include:

- Proton radiography, a powerful new technique that provides motion picture-like images of the extremely fast forces inside high-explosive detonations
- Quantum computing and quantum cryptography breakthroughs
- Improved methods for detecting beryllium sensitivity and disease
- Computer- modeled date for the origin of HIV.
- Providing assistance to the investigations of anthrax bioterror attacks.



The Laboratory developed a unique spin technology in the development of advanced thin films.

Research and Development Awards

Each year, *R&D Magazine* recognizes the world's top 100 advances in science and technology with its R&D 100 awards. Los Alamos National Laboratory has received 79 R&D 100 awards since 1978.

Opportunities in Education

Research and educational experiences at Los Alamos enhance the skills of more than 1,000 students each year. In addition to its post-doctoral program, the Laboratory provides on-the-job educational opportunities to graduate and undergraduate students in a broad spectrum of

Partnerships with Industry

Los Alamos has more than 300 industrial partnerships with a combined value in excess of $650 million in the past decade, with an aggressive continuing program. Laboratory industrial partnerships bolster the economy and increase America's competitiveness in the global marketplace.

Quick Facts

Location

Los Alamos, New Mexico, approximately 35 miles northwest of Santa Fe.

Employment (full-time equivalent employees)

University of California	7,949
Postdoc	355
Students	1,351
Contractors	1,378
Limited term and other	326
Total	11,359

Budget

Fiscal year 2003	$2.1 billion
National Security	84 percent
Environmental Quality	8 percent
Energy Resources	2 percent
Science and Technology	6 percent

Site Characteristics

38 square miles
47 separate technical areas
2,224 individual facilities

Los Alamos
NATIONAL LABORATORY

Los Alamos National Laboratory is operated by the University of California for the U.S. Department of Energy's National Nuclear Security Administration

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